NEW CITIES FOUNDATION

Urban E-health Project in Rio

Santa Marta community, Rio de Janeiro

Research and Analysis from the New Cities Foundation Task Force in Rio de Janeiro

Executive Summary

Healthcare systems in emerging countries are at a turning point, one that is defined by interrelated demographic and epidemiological changes: namely, a population that is aging, and a shift from infectious diseases to complex chronic conditions such as hypertension, diabetes, obesity and heart disease. This new reality poses a serious challenge in cities, particularly in low-income or underserved communities characterized by harsh living conditions and a lack of access to healthcare and other public services. This two-pronged transition is placing an unprecedented strain on healthcare systems in emerging countries that are already hemmed in by limited resources.

To address this challenge, the New Cities Foundation set up a **Task Force on E-health**, working in close collaboration with the Municipality of Rio de Janeiro, GE Healthcare and the State University of Rio de Janeiro (UERJ). The objective: to test a replicable, cost-effective healthcare model that leverages technology to provide improved access to primary healthcare in an underprivileged urban community. (The term primary healthcare refers to the main point of consultation for patients and the mechanism by which patients gain access to any specialists they may need.) The Task Force sought answers to the following questions:

- Can the use of e-health technology bring **cost savings to the public healthcare system while improving access to healthcare** in an underserved urban community?
- Does e-health **improve the consultation experience** for health professionals as well as for patients?
- Does it help the public healthcare system **address chronic disease conditions** among elderly low-income patients?

The Task Force equipped a primary care health clinic in the community of Santa Marta in Rio de Janeiro with an e-health kit (developed by GE) consisting of a backpack that contained various tools to measure health indicators. For the pilot project, the clinic staff made home visits to attend to a sample of 100 elderly patients suffering from chronic diseases and mobility issues, with the goal of producing a comprehensive diagnosis using this e-health backpack. Patient data was also collected using the kit. Meanwhile, an independent team of researchers from UERJ produced a qualitative and quantitative impact assessment of the e-health pilot on the patients and the community's healthcare staff.

Summary of Key Findings

1. Applying an e-health model of healthcare in an underprivileged urban community can bring significant cost savings to the public healthcare system.

Enabling health workers to reach patients who are difficult to access, the e-health model of primary care delivery makes it easier to monitor health indicators in underserved urban communities. According to the study, regular monitoring of basic health indicators among elderly patients as well as timely diagnosis of chronic diseases generally decreased the risk of hospitalization for patients with certain chronic conditions. In turn, avoiding hospitalization results in substantial savings for the public healthcare system. That

benefit is particularly pronounced in the case of elderly patients, whose recovery is slower, more complex and costlier than for the rest of the population and who therefore require lengthier hospital stays. The amount of cost savings due to avoided clinical events for specific types of chronic disease ranged between USD $4,000 (heart failure) and USD $200,000 (kidney dysfunction) per 100 elderly patients in the e-health program. Similarly, the cost savings due to avoided hospitalizations of patients with cardiovascular diseases was around USD $136,000 per 1000 patients in the e-health program. As a point of reference, the market price of the e-health backpack is USD $42,000.

2. E-health technology facilitates the job of healthcare professionals and improves the in-home medical checkup experience for patients.

E-health backpack equipment reduced the time needed to obtain medical results. With conventional medical testing procedures, results from blood samples can take up to 15 days, as opposed to three minutes with the e-health kit. Consequently, patients and healthcare professionals alike indicated high levels of satisfaction with the use of the backpack to conduct medical home visits.

3. An e-health model of healthcare accelerates the public health system's ability to overcome barriers to healthcare access in underprivileged communities.

The e-health pilot project helped bridge the social and digital gap between Santa Marta's residents and the city's public healthcare system. By bringing high-tech medical tools to Santa Marta – equipment conceived for an underserved community and adapted specifically to the needs of this community – the e-health pilot essentially leapfrogged the process of gradual, incremental improvements in Rio de Janeiro's healthcare services. Urban health services around the world can learn from this model to adapt their approach to healthcare delivery – from both a process and technological reform standpoint – in dense, low-income urban areas.

The full UERJ technical report and data analysis can be found at:

http://www.newcitiesfoundation.org/wp-content/uploads/PDF/Research/New-Cities-Foundation-E-Health-Final-Report-UERJ.pdf

NEW CITIES FOUNDATION

www.newcitiesfoundation.org

contact@newcitiesfoundation.org